DRAFT

Chapter 6: Trails

Trails in Redmond provide recreation and transportation, and support healthy, active lifestyles in urban, suburban and rural settings. Redmond's trails are well used and there is high demand for more. The public's top priority is more trails that better connect neighborhoods and second is more regional connections.

Table of Contents

Contents

6.0 Introduction 3
6.0.1 Trail Classifications 3
6.0.2 Regional Trail Planning 5
6.1 Policies and Goals 6
6.1.1 Policies 6
6.1.2 Goals 7
6.2 Inventory 10
6.2.1 Inventory Methodology 10
6.2.2 Inventory of Trails 12
6.2.3 Accomplishments since 2010 15
6.3 Need 16
6.4 Demand 19
6.5 Level of Service 22
6.5.1 LOS Methodology 22
6.5.2 LOS Results 25
6.6 Implementation 26
6.6.1 Developing the CIP Project List 26
6.6.2 Prioritizing CIP Projects 27
6.6.3 Funding 40

Exhibits

Exhibit 6.1: Lakes to Locks Trail System 5
Exhibit 6.2: Quality Rating: Level of Satisfaction of Pathways and Trails 11
Exhibit 6.3: Mileage of Trails in Redmond by Provider 12
Exhibit 6.4: Citywide Trail System 13
Exhibit 6.5: Water Access Points in Redmond 14
Exhibit 6.8: Types of Trail Users 19
Exhibit 6.9: Most Used Trails ..... **Error! Bookmark not defined.**
Exhibit 6.10: Word Cloud - Responses to "What would you like to see LESS of on Redmond's Trails?" 9
Exhibit 6.11: Monitored Trails: Daily Average and Maximum User Counts ..... **Error! Bookmark not defined.**
Exhibit 6.12: You Count Program Monitored Locations 21
Exhibit 6.13: Level of Service - Service Area by Provider 23
Exhibit 6.14: Trail Service Area Credit by Provider 24
Exhibit 6.15: Percent Population Served by Trails. 25
Exhibit 6.16: Implementation Steps for Capital Projects. 26
Exhibit 6.17: CIP Project List Development Flowchart ..... **Error! Bookmark not defined.**
Exhibit 6.18: Proposed Trail Projects - 6 Year Priories 28
Exhibit 6.19: Proposed Trail Projects - 20 Year Priorities 29
Exhibit 6.20: Proposed Projects Map ..... **Error! Bookmark not defined.**
Exhibit 6.21: Service Area Expanded by Proposed Trail Projects ..... **Error! Bookmark not defined.**

Redmond Central Connector Trail.

"Redmond has more than 59 miles of trails within the city limits including 32 miles of paved trails, 27 miles of soft surface trails, and 7.5 miles of blue trails."

- 2015 Inventory

6.0 Introduction

Redmond has more than 59 miles of trails within the City limits that community members' use for recreation and transportation. The trail system includes trails on land and in the water. Trails are used by many different types of users including, but not limited to, walkers, runners, road bicyclists, mountain bicyclists, equestrians, inline skaters and roller skaters, skateboarders, and ski trainers and blue trails for boating. Redmond's trails are developed by the City and private developers.

Trails are highly valued and well used by people who live and work in Redmond. Of those who responded to the PARCC Plan survey in 2015, 50 percent reported using a Redmond trail or pathway daily or multiple times a week[1].

6.0.1 Trail Classifications

There are four main types of trails within the system. Each classification is designed to meet different needs and accommodate different types of use. This approach allows the City to provide a wide variety of trail experiences. It also guides trail planning so the right trails are built in the right places. The majority of Redmond's trails are mixed-use meaning that walkers, cyclists, equestrians and other users are allowed. Some restrictions to specific user types exist and are well signed.

Trail Classifications:

- Regional Trails
- Connector Trails
- Local Trails
- Blue Trails

Regional Trails

Regional trails are typically planned and designed with active transportation and high volume recreation use as their primary purpose. They accommodate a widest range of users. They are intended to be long-distance routes that span a good portion of the city limits leading to other jurisdictions and connect to other trails. Coordination with adjacent jurisdictions and transportation planners is central to developing a complete system of regional trails. Regional

[1] 2015, EMC Research. PARCC Plan Survey

trails follow the design standards for Shared Use Paths as specified in the City of Redmond's Bicycle Facilities Design Manual Guidelines (2016 or latest version). In general, regional trails are completely separated from roads by distance or barriers and at-grade crossings of roadways are minimized to avoid conflicts. In instances where property is insufficient, regional trails may be placed adjacent to road ways. These trails are referred to as "urban pathways" or "side-paths" in other City planning documents. Regional trails should be a minimum of 12 feet wide under most conditions, with a minimum two-foot wide graded area on both sides that should be flush with the trail. Wider trails may be necessary when more than 2,000 people a day are using a trail, pending peak volumes. Ideally, paved regional trails should have an adjacent four-foot wide unpaved area to accommodate a wider set of user preferences. In most cases, regional trails are paved. However, interim uses and sometimes long-term uses require the use of a gravel or earth surface.

Regional Trail Example: Bear Creek Trail

Connector Trail Example: Ashford Trail

Connector Trails

Connector trails are the key linkages between regional trails and other key areas. These trails can be paved or soft surface trails, but are typically narrower than regional trails, due to more limited use and possible land access issues. These trails are designed for recreation and transportation uses. Connector trails should meet the city's sidewalk standards as a minimum and have a width of six feet to eight feet. However, interim uses and sometimes long-term uses require the use of soft surface materials. These trails are in high demand by the community as a key way to make walking and bicycling more convenient modes of travel within Redmond.

Local Trail Example: Hidden Ridge Trail

Blue Trail Example: Sammamish River

Local Trails

Local trails are typically soft surface trails that can range from one foot to five feet wide. These trails are typically designed for recreational uses such as neighborhood links, park trails, and hiking, off-road bicycling, and equestrian trails. These trails can also meet special interest activities such as BMX and mountain biking. Local trails are typically constructed with native soil from the site or with a surface of gravel or wood chip material if additional reinforcement is required. Trail surfaces are graded slightly to reduce the potential for erosion. Some local trails may require structures such as retaining walls or bridges.

Exhibit 6.1: Lakes to Locks Trail System

The Lakes to Locks Trail is a system of blue trails that connects the Sammamish River in Redmond to Lake Washington and beyond.
https://wwta.org/water-trails/lakes-to-locks-trail/

Blue Trails

Blue trails are water trails along navigable waters within the city such as the Sammamish River and Lake Sammamish. The primary design criteria for blue trails include providing frequent access points to the water where personal water craft can be safely and easily transported from parking areas and providing adequate signage and route finding materials. Redmond is part of the Lakes to Locks Trail, a system of blue trails that connects the Sammamish River in Redmond to Lake Washington and beyond.

6.0.2 Regional Trail Planning

Continuing to connect the regional trail system has been and remains a priority for people who live in Redmond. When asked to rank potential projects, 66 percent of survey respondents ranked new regional trail projects as a priority[2].

Planning trails from a regional perspective is key to creating a well-connected trail system between jurisdictions. For the blue trail and the regional trail systems to connect and serve the greater eastside area, adjoining governments must work together. King County and the cities of Kirkland, Bellevue, Sammamish and Woodinville all share borders with Redmond and provide important links in the regional trail networks.

For several years, cities on the eastside of Seattle have worked together to create a vision for regional trails that will eventually connect many of those cities together. Redmond is home to some important links in the system such as a segment of the Sammamish River Trail, a segment of the 520 Trail, the PSE Powerline Trail, and the Eastside Rail Corridor that includes the Redmond Central Connector Trail. Redmond takes an active role in expanding and maintaining the regional trail network by working with other eastside jurisdictions through the Eastside Rail Corridor Regional Advisory Committee, with King County on the Sammamish River Trails east and west of the river, and with WSDOT on improvements to the SR 520 Bike Trail.

[2] 2015, EMC Research. PARCC Plan Survey

6.1 Policies and Goals

The Parks and Recreation Department follows the guidance of City policies and the community in developing goals to prioritizing capital trail projects. The Parks and Trails Commission reviews and comments on proposed goals and makes recommends on goals to be adopted. As part of the development of the PARCC Plan, community members at large were asked to provide input on their vision for trail facilities. The following policies and goals reflect the guidance received from the Commission and the public.

WSDOT's SR 520 Trail in Redmond

6.1.1 Policies

Policies that guide the department in trail planning and development are found in various elements of the Comprehensive Plan. The following policies are highlights from other Comprehensive Plan elements that relate directly to the planning and development of trails.

The Goals, Vision and Framework Policies establish overarching direction for the City. One policy states that the City will "Maintain and promote a vibrant system of parks and trails that are sustainably designed, preserve various types of habitat and protect the natural beauty of Redmond" (Policy FW -29).

An important component of Redmond's character is its pedestrian and bicycle system that facilitates healthy lifestyles. The Community Character and Historic Preservation directs the City to "Design and create trails, sidewalks, bikeways and paths to increase connectivity for people by providing safe, direct or convenient links between the following:

- Residential neighborhoods,
- Schools,
- Recreation facilities and parks,
- Employment centers,
- Shopping and service destinations, and
- Community gardens." (Policy CC-24)

"Design and create trails, sidewalks, bikeways and paths to increase connectivity for people…"

- Policy CC-24

Redmond strives to be a "green" community that values its natural resources. The Natural Environment element directs the City to "Encourage environmentally friendly construction practices, such as Leadership in Energy and Environmental Design (LEED), King County Built Green, and low-impact development" (Policy NE-12).

Trails are an important component of the non-motorized transportation system that connects the community. The Transportation element directs the City to "Assign high priority to pedestrian

and bicycle infrastructure projects and mitigation that address safety and connectivity needs, provide access to Downtown and Overlake Urban Centers, encourage safe and active crossings at intersections and routes to schools, provide linkages to transit, and complete planned bicycle and pedestrian facilities or trails." (Policy TR-12).

The bulk of City policies that pertain to trail planning and development reside in the Parks, Arts, Recreation, Culture and Conservation element. These policies provide more detailed direction including guidance on distribution of trails, promotion of trail use, design elements to include and important collaborative partners. High priority projects are also identified within these policies. This plan proposes several updates and additions to trail related policies as detailed in Chapter 3. A consolidated list of trail related policies from across the Comprehensive Plan is provided in Appendix A.

Bear & Evans Creek Trail through Southeast Redmond Open Space.

"Keep working toward the goal of providing everyone that lives or works in Redmond with access to a trail within a ¼ from their home or office."

- Goal 8

6.1.2 Goals

Community members shared their priorities during the public meetings, focus groups, and surveys as part of the PARCC Plan visioning process in 2015. This guidance has helped formulate citywide goals for trail planning.

For example, during public workshops, participants expressed what they liked and disliked about the trail system in Redmond. Two open ended prompts were provided for participant response. Exhibit 6.10 shows a word cloud of the responses to one of these questions. Conflicts between pedestrians (walkers) and cyclists (bikers) were noted most often as an item that needs to be addressed. Specific underlying issues that create conflicts between users were also noted, such as pedestrians behaving in unpredictable ways (wandering walkers and uneducated users, and extendable dog leashes), bicycle speeds, and congestion.

The following list of goals was developed using feedback from the public and guidance from the Parks and Trails Commission.

1. Continue to put safety for all users as the top priority for trail planning and design by implementing physical and educational trail safety measures on regional trails regarding speed and trail etiquette. Consider separating trail users with two parallel trails.
2. Continue to keep Redmond's trails clean, well maintained and welcoming.
3. Trails need to be: wide enough to handle volumes and minimize user conflicts; usable at night and in twilight; high comfort

facilities; accessible and easy to navigate with wayfinding; and connect with other systems such as sidewalks, bike lanes and transit.

4. Maintain and enhance a safe environment for equestrians on Redmond trails and increase horse-friendly access points to the trail network.
5. Create a more connected pedestrian and bicycle network through a coordinated citywide effort to plan and implement on-street and off-street trail facilities.
6. Plan and design trails to accommodate a wide range of users by considering user purpose, mode, speed, and other factors.
7. Seek out and build small, neighborhood-level connections that shorten the routes between destinations such as homes, parks, natural areas, schools, neighborhoods, employment centers, civic centers, shopping, and entertainment.
8. Keep working toward the goal of providing everyone that lives or works in Redmond with access to a trail within a ¼ from their home or office.
9. Make walking and biking easier than traveling by car.
10. Encourage and facilitate bike-share programs to make bicycling a viable and convenient option of travel.
11. Continue to work toward completing the vision of the Eastside Rail Corridor connecting Redmond to other regional trails via the Redmond Central Connector.
12. Gain access to the trails in the Willows Fjord area.
13. Complete trails such as the Bear-Evans Creek trail system, the Redmond/PSE Trail to the Watershed, the Redmond/PSE connection to Kirkland, and others.
14. Improve the Blue Trails to include smaller steps to the launch points, recovery places along portage routes (from parking areas), interpretive signs along the trail, maps at launch points, and mileage markers in the water. Implement the access point conceptualized in Redmond's Municipal Campus Master Plan.
15. Include more trail amenities on regional trails such as benches, pet stations, play structures, kiosks, water fountains, equestrian hitching posts and mounting blocks, charging stations for e-bikes, bike lockers near transit, and art.
16. Add wayfinding signs along trails indicating the trail name, distance to the next intersection, and cross roads or trails. Include City gateway signs on regional trails at the City limits.
17. Use the trail system as a stage for connecting the community through art and culture. Provide interesting places and facilities for community and cultural connections to occur.
18. Provide ample volunteer opportunities for the community to engage in and build ownership of the trail system. Consider

Redmond Bike Park volunteer construction team.

"Provide ample volunteer opportunities for the community to engage in and build ownership of the trail system."

- Goal 18

new partnerships and contracts with volunteer management groups such as Forterra, Evergreen Mountain Bike Alliance, Cascade Bicycle Club, and others.

19. Provide a variety of trail experiences from busy, paved urban trails filled with art and connections to shopping, to quiet, earth surface trails that make nature just a step away.
20. Continue to maintain the Redmond Bike Park with volunteer Trail Stewards.
21. Increase the awareness and promote the use of trails with up-to-date maps of the trail system. Work with online mapping systems, such as Bing Maps and Google Maps, to ensure that the trail data being used is accurate.

Exhibit 6.10: Word Cloud - Responses to "What would you like to see LESS of on Redmond's Trails?"

6.2 Inventory

An inventory of the existing trail system is a key piece of information needed for planning. It provides the context by which decisions for development, repair and replacement are made. An inventory of Redmond's trail system was conducted and the definition of trails was updated. Trail length, type, materials, and condition, based on routine inspection information, were evaluated. Finally, the quality of the trail system was also assessed, based on public opinion. The inventory was conducted in three phases:

1. Revised trail definitions
2. Physical inspections
3. GIS mapping update
4. Quality assessment

6.2.1 Inventory Methodology

Trail Definition

During the inventory exercise, the definition for trails was updated to provide a more comprehensive view of trails in Redmond. The former definition for trails included only trails that the City of Redmond owns and maintains, with a few exceptions. The revised definition was expanded to include any trail that allows access to the public in order to understand the trail system as a whole. The new data now includes all trails in Redmond that are managed by other providers such as King County, Washington State Department of Transportation, Lake Washington School District and private providers with some degree of public access. Including public trails provided by others allows planners to assess more accurately where additional trails are needed most. Another update was the inclusion of all pathways within parks as trails. Formerly, pathways and trails in parks were split between the City's sidewalk data and the trail data. Incorporating park paths into the trail data adds to a more comprehensive view of trails in Redmond and allows for a more accurate representation of the service provided by trails in Redmond.

Physical Inspections

Physical inspections are conducted by park operations staff annually. The inspections include an evaluation of a trails condition, type, width, and surface. If small problem items are found, they are addressed immediately. If problems will require additional resources to address, they are added to the small capital projects list. See Chapter 7 Operations & Maintenance for details and potential projects.

GIS Mapping Update

Upon completion of the physical inspections, Redmond's geographic information system (GIS) mapping was updated to ensuring the current trail length, surface type and classification were included in GIS. A data field was added to GIS to include the appropriate planning source document to the trail segments within GIS in order to trace the history of each project.

Afterwards, the GIS data was used to determine the quantity of the trails in the system by type and in total, as shown in Exhibit 6.4. The updated data was later used to determine the geographic area served by the system (see section 6.5 Level of Service).

Chapter 6: Trails

Quality Assessment

The quality rating of the trails system is measured by public opinion. The users of the system provide feedback the condition and performance of the system. The 2015 PARCC Plan survey asked people who live and work in Redmond to rate their overall level of satisfaction with "trails and pathways in Redmond" in which 86 percent of respondents reported they were "highly satisfied" or "somewhat satisfied" with trails and pathways. Exhibit 6.2 shows a breakdown from the survey.

While the overall feedback on the City's trail system is positive, some negative feedback exists that provides guidance on how the system can be improved including overcrowding and user conflicts on busy trails like the Sammamish River Trail, bicycles moving a high speeds, and trail users' compliance with trail etiquette. See section 6.4 Demand for more details.

Exhibit 6.2: Quality Rating: Level of Satisfaction of Pathways and Trails

2015, EMC Research, PARCC Plan Survey

[Info-graphic coming soon]

6.2.2 Inventory of Trails

In total, Redmond has an inventory of more than 59.4 miles of trails within its borders. The City of Redmond owns and/or maintains 39.3 miles of trails, accounting for 66 percent of the total trail system inside city limits. The remaining 33 percent (nearly 20 miles) is provided by entities other than the City of Redmond.

The 2010 PARCC Plan reported approximately 40 total trail miles with 30 miles provided by Redmond. The City and others have built new trails since 2010 that are reflected in the updated number. In addition, the City changed the definition of trail to include paths inside parks and more trails provided by others within City limits as mentioned above.

Exhibit 6.3: Mileage of Trails in Redmond by Provider

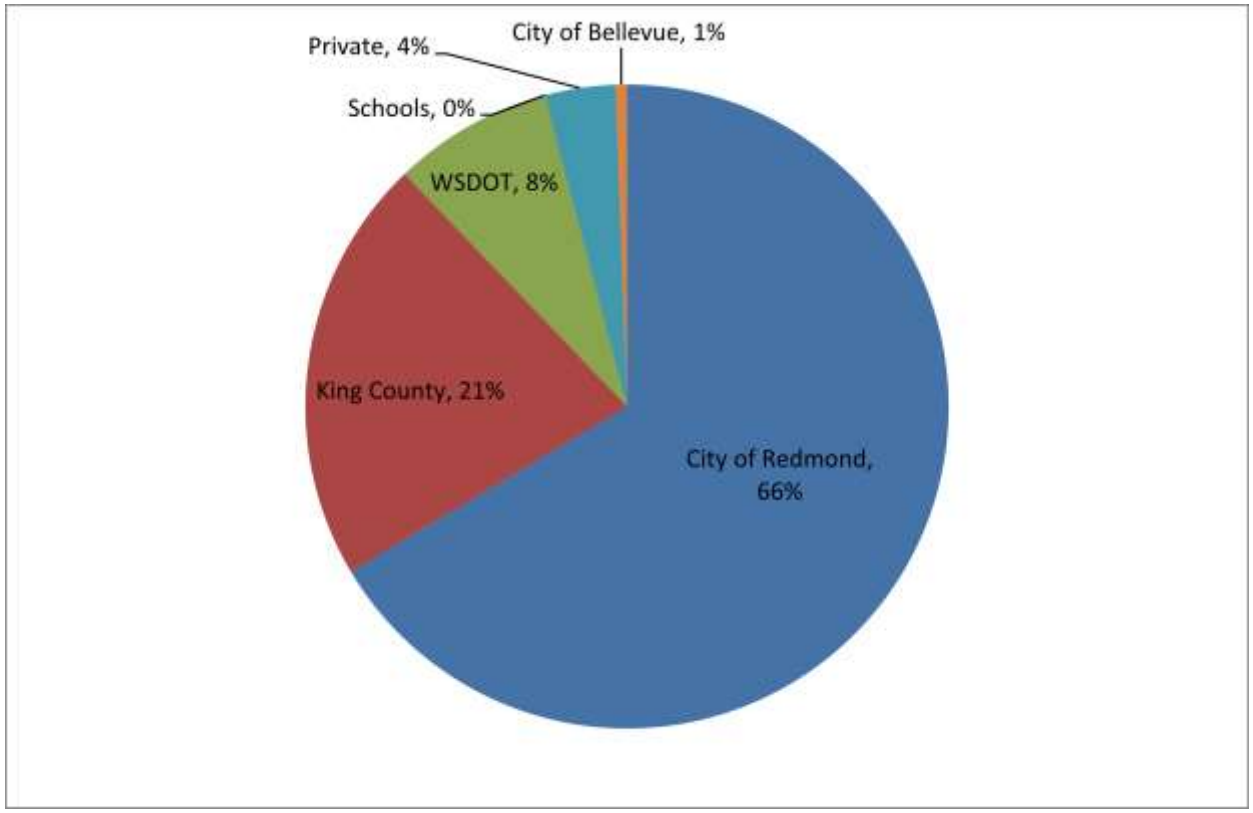
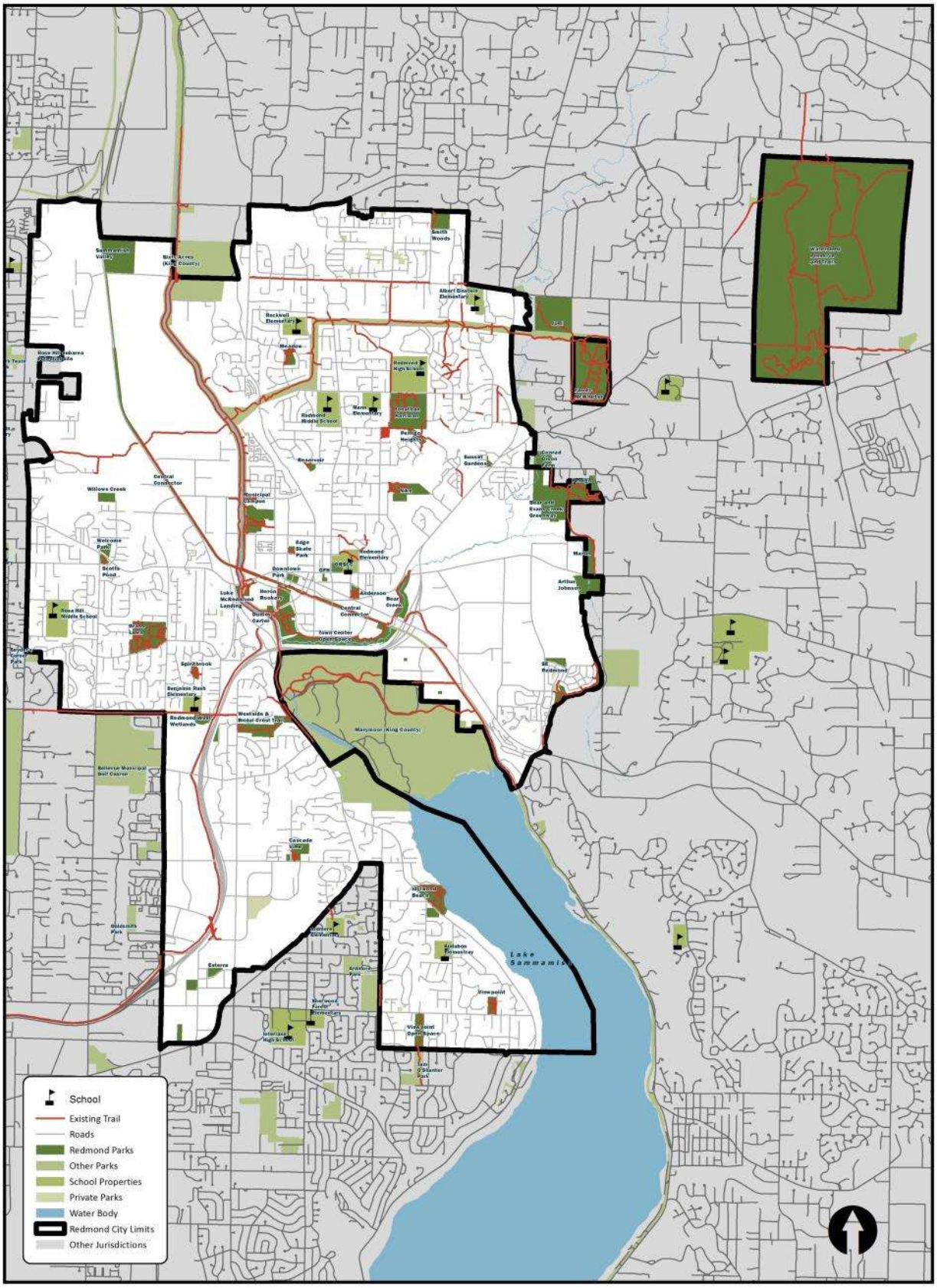


Exhibit 6.4: Citywide Trail System



Chapter 6: Trails

Blue trails are water trails where access points are provided and navigable non-motorized routes are recommended on local or regional maps. The Sammamish River and Lake Sammamish are the navigable waterways that comprise the blue trails in Redmond. They are also part of the Lakes-to-Locks blue trail system, as shown in Exhibit 6.1. The City, in partnership with King County, has provided a number of access points to the blue trails in the following locations:

- 116th and Sammamish River Trail
- 90th and Sammamish River Trail (near Municipal Campus??)
- Luke McRedmond Park and Sammamish River Trail
- Marymoor Boathouse
- Idylwood Beach

Exhibit 6.5: Water Access Points in Redmond

6.2.3 Accomplishments since 2010

Redmond Central Connector Phase I, 2013

Redmond West Wetlands Boardwalk and Stairs Replacement, 2012

Smith Woods Trail, 2011

New Trails

The City has added two miles of trail to the system since the last version of this plan. The following is a list of trails built and major trail improvements since 2010 with brief descriptions of each project:

Redmond Central Connector Phase I, 2013: One mile of paved regional trail was constructed along the former BNSF railway in downtown Redmond. This was the first of three phases of trail conceptualized to connect Redmond in a new way. Extensive public input guided the planning of the whole project. Phase I included new pedestrian and bicycle connections between Redmond's historic downtown and the Redmond Town Center, a contemporary shopping destination. It also included a large, park-like area referred to as the "Station Area," where John Flemings's art piece "Signals" stands, a venue that hosts community events. Phase I will have the highest urban design quality of the three phases, because of its location in the densely populated downtown area. It includes integrated art throughout and extensive landscaping to create a unique community space.

Viewpoint Park Nature Loop, 2015: A 600 foot local trail was constructed that loops through the forested eastern slope of Viewpoint Park.

Smith Woods Trail, 2011 & 2015: This project, built in two phases, created a 600 foot soft-surface local trail through Smith Woods. The trail was constructed by volunteers as an Eagle Scout project.

Redmond Central Connector Phase II, 2016: 1.3 mile paved regional trail along the former BNSF railway through Downtown and the Willow's Road corridor. This project is under construction in 2016 as this plan is in publication. It is the second of the three phases planned for the overall project. This phase connects Downtown to DigiPen, Overlake Christian Church and other destinations in the Willows Road corridor. The project includes the retrofit of a trestle bridge over the Sammamish River, retrofit of a bridge over 154th Avenue NE, integrated art, and crossing improvements.

Major Trail Maintenance

In addition to building new trails, the City has conducted extensive maintenance on one third of a mile of existing trails, including:

Bear Creek Trail Root Damage Repair, 2010: A segment of the Bear Creek Trail was found to have potential trip hazards and decreased accessibility from tree root damage. This project removed damaged asphalt, addressed the tree roots and repaved the affected trail section.

Redmond West Wetlands Boardwalk and Stairs Replacement, 2012: This project replaced deteriorating boardwalk and trail stairs to keep the trail open for public use.

Grass Lawn Park Trail Resurfacing, 2015: This project removed asphalt from an existing trail in the park and resurfaced with gravel. The trail passes through a forested area of the park. Over time, tree roots have lifted the asphalt causing damage to the trail surface. The gravel surface is better for the health of the trees and can be more easily maintained with the continued growth of the roots.

Hidden Ridge Trail Resurfacing, 2015: This project removed asphalt from sections of the Hidden Ridge Trail. Similar to the Grass Lawn Park Trail project, the transition to gravel addressed accessibility issues with the trail and created an environment that is better for the forest trees that surround the trail.

Watershed Preserve Bridge Repair, 2016: A trail bridge at the Watershed Preserve was in need of repair. This project reconstructed supports on the bridge and addressed sinking conditions and associated trip hazards.

6.3 Need

Trails improve our overall quality of life similarly to parks, in that they can also provide the following benefits:

Conservation – As discussed in Chapter 5, trails are one way that the City can preserve environmentally sensitive areas, culturally significant property, and historic properties. Redmond has many great trails that allow residents access to conservations areas including the Watershed, Redmond West Wetlands, Juel Park, Farrel McWhirter Park, Smith Woods and more.

Place of Tranquility – Trails provide a place to get away from our hectic daily lives to enjoy fresh air, relax, have physical activity, and relieve stress. Research shows that exposure to natural environments improves mood and can lead to reduced stress levels and blood pressure[3]. Regular physical activity is essential for health and wellness[4].

Community Building – Trails provide places for community members to recreation and socialize together, strengthening their relationships within the community. Many of our residents live in high density housing, where meeting your neighbor in the yard is no longer an option; therefore public places become more vital to developing neighborhood connections[5].

[3] 2010, K. Frances. *Parks and Other Green Environments: Essential Components of a Healthy Human Habitat*, NRPA. (http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/MingKuo-Research-Paper.pdf)
[4] Godbey, G., A. Mowen, 2010, *The Benefits of Physical Activity Provided by Park and Recreation Services: The Scientific Evidence.* NRPA. (http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Godbey-Mowen-Research-Paper.pdf)
[5] Francis, M., 2007, *How cities use park for Community Engagement,* American Planning Association. (https://www.planning.org/cityparks/briefingpapers/communityengagement.htm)

Exhibit 6.7: Needs Image

COMING SOON

Caption.

Recreation – Trails provide places for active and passive recreation. The number of people who use Redmond's trails is very high. The 2015 PARCC survey reports that 72 percent of respondents said they use a Redmond trail or pathway every day to a few times per month. Only 4 percent reported not using trails at all[6].

Promoting Creativity, Development and Education – Trails provide places of discovery in the form of built and natural environments. Children and adults alike can learn and develop new skills in bicycle riding on a trail, discovering new plants or birds on a walk, or learning about the environment or an artwork on an interpretive sign along the way[7].

Economic - There are a variety of studies conducted around the world that have shown that trails provide economic value to cities and citizens in a number of ways including property value, tourism value, direct use value, health value, community cohesion value, and reducing the costs of storm water management and air pollution[8,9]. In addition, large companies frequently look for cities with a thriving cultural center when opening new offices[10].

Property Value – More than 30 studies have shown that property values are higher and directly related to proximity to and the quality of the park or trail. Most studies show increased value when properties are located 500 feet to 2,000 feet from a park or trail. This benefits the property owner and the city, since property taxes increase with the value of the property (footnote 9).

Tourism Value – When a trail attracts people from outside of town, or even outside the neighborhood, it is likely that those people might spend money nearby, whether it is for a snack, meal, shopping, or to see an event, and possibly spend the night at the local hotel[11].

---

[6] Redmond Parks and Recreation Survey, June 2015, EMC Research

[7] Witt, P., L. Caldwell, 2010, *The Rationale for Recreation Services for Youth: An Evidence Based Approach.* NRPA. (http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Witt-Caldwell-Full-Research-Paper.pdf)

[8] 2009, P. Harnik and B. Welle. *Measuring the Economic Value of a City Park System*, Trust for Public Land.

[9] Crompton, John (2005). "The Impact of Parks on Property Values: Empirical Evidence from the Past Two Decades in the United States". *Leisure Management* 10, 203-218

[10] 1995, Crompton & July 27, 2009 Congressional Record—House H8825

[11] Harnik, P., & Crompton, J.L. (2014). Measuring the total economic value of a park system to a community. *Managing Leisure*, 19(3), 188-211. (Open Source: http://agrilifecdn.tamu.edu/cromptonrpts/files/2011/06/Measuring-the-total-economic-value-of-a-park-system-to-a-community.pdf)

Direct Use Value – Trails are free to the public or heavily subsidized, therefore they provide a tangible value to people who might otherwise have to use a commercial facility to realize the same benefits. Therefore the direct use value is the cost savings that the trail system provides the public (footnote 11).

Health Value – Parks and recreation facilities typically provide a means of physical activity for the public, which has been proven to reduce some chronic diseases that cost our community a considerable amount of money (footnote 4).

Reducing the Cost of Managing Urban Stormwater - Co-locating parks and stormwater management sites and using low-impact development techniques can reduce the cost of land acquisition and treatment of stormwater (footnote 11).

Removal of Air Pollution by Vegetation –Vegetation in city parks plays a role in improving air quality and reducing pollution costs. Trees and shrubs remove air pollutants such as nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, and some particulates. Leaves absorb gases, and particulates adhere to the plant surface, at least temporarily (footnote 11).

6.4 Demand

Several approaches were used during outreach with the community in an effort to understand the use and demand for trails in Redmond. The 2015 PARCC Plan survey included several questions about trail use in Redmond. Public workshops included interactive sessions dedicated to the discussion of trails. Additionally, in 2015 select trails were monitored to collect data on user counts as part of the "You Count" program described below. More information on the survey is provided in Chapter 3. Some of the most common themes found in this data are summarized as follows:

1. Redmond's trails have high use and there is demand for more miles of trails and widening of existing trails.
    - 50% of respondents use trails multiple times a week (PARCC Survey, 2015)
    - 40% of respondents desire more short trails that better connect the existing trail system (PARCC Survey, 2015)
2. People who live and work in Redmond are highly satisfied with the trails in Redmond and feel that it is important that they are clean and well maintained.
    - 86% of respondents report being "somewhat satisfied" and "very satisfied" with Redmond's trails and pathways (PARCC Survey, 2015).
    - When asked to rank the qualities of trails, 97% of respondents said that it is important that they are safe to visit or well maintained and 98% said that trails being clean is important (PARCC Survey, 2015).
3. Overall, people want more small trails that enable easier travel around town, and also want the City to continue developing additional connections to the regional trail system.
    - 69% of respondents desire unpaved local trails through parks and greenspaces (PARCC Survey, 2015).
    - 66% of respondents would like the City build more regional trails (PARCC Survey, 2015).
4. Over half of people in Redmond report walking (45%) or biking (10%) to local parks but do so more often in areas with better pedestrian/bicycle connectivity (PARCC Survey, 2015).
5. When asked about prioritizing trail projects, respondents stated that creating a better connected trail system within Redmond was preferred (40% of respondents) but a balanced approach between short connecting trails and adding more regional trails was important (PARCC Survey, 2015).
6. The most used trails include:
    1. King County Trails
    2. Redmond Central Connector
    3. Bear Creek Trail

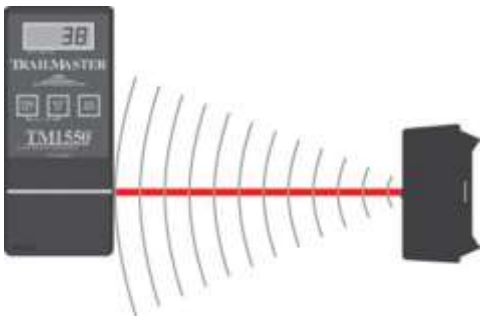
(PARCC Survey, 2015)

Exhibit 6.8: Types of Trail Users

From public feedback exercise conducted during outreach meetings spring 2015 [consider a pie chart for this] It is assumed that people walking dogs are included in the "Walking" category.

Exhibit 6.11: You Count Monitoring System

The "You Count" program is an automatic user count system for Redmond's parks and trails. It was installed in 2015, and monitors ten trail locations throughout the city. The program uses equipment fitted with an infrared light beam to count users. Each time a user passes through the beam a count is recorded with the date and time. The data is collected on the equipment, then downloaded to a computer and analyzed to identify trends in use. Regional trails were selected as the focus of trail monitoring because they typically have the highest numbers of users.



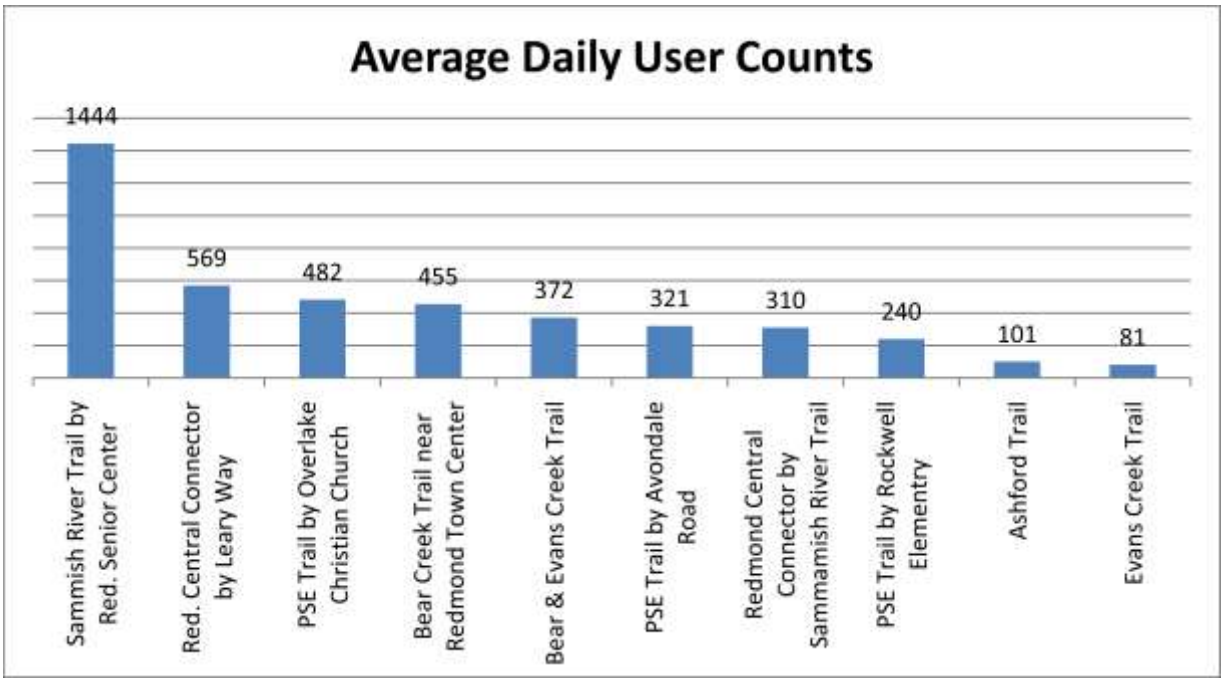
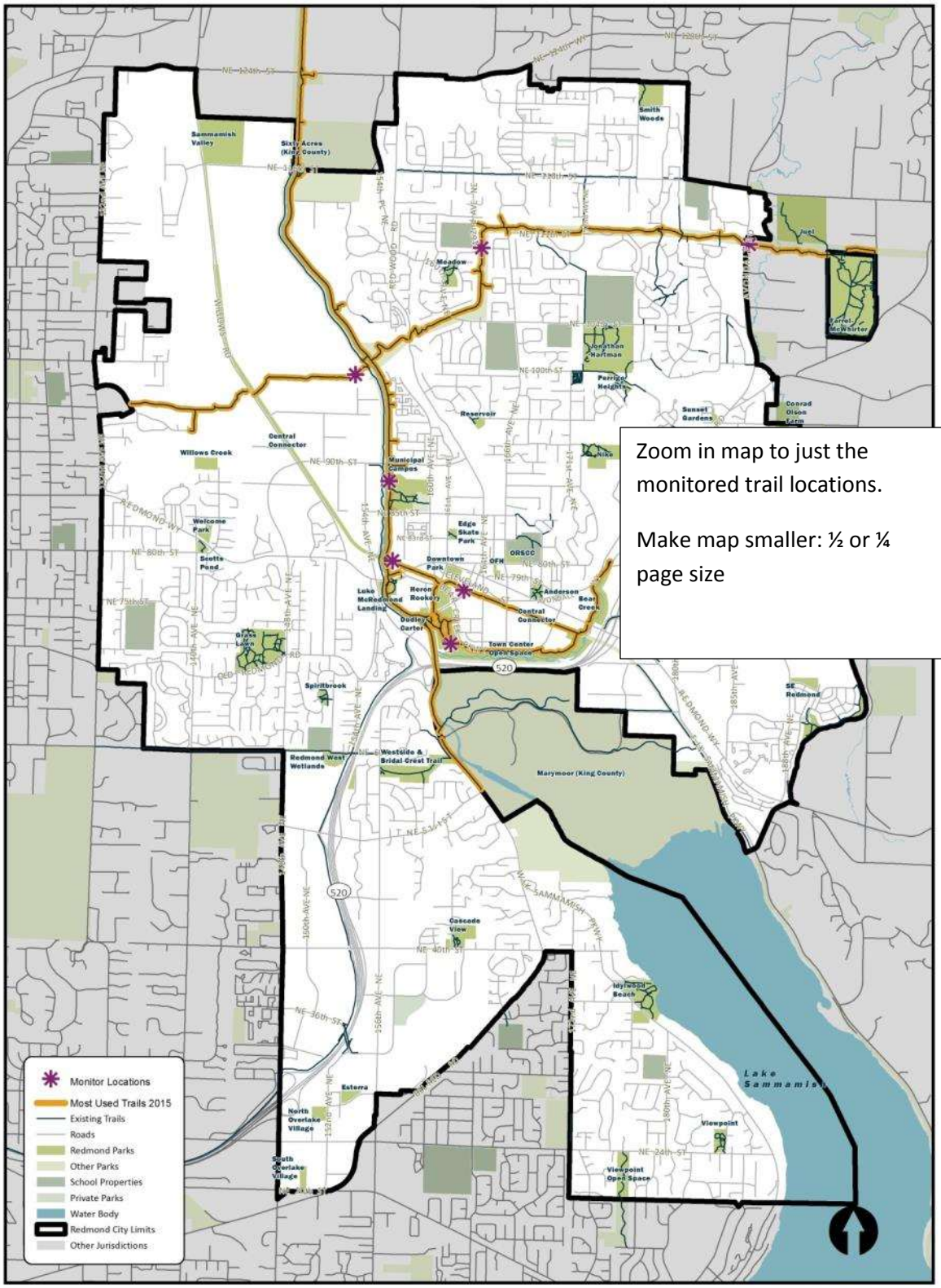


Exhibit 6.12: You Count Program Monitored Locations



You Count Program - Highest Use Trail Locations PRELIMINARY

6.5 Level of Service

Redmond's Comprehensive Plan prioritizes the need to plan, build and maintain a trail system that connects the community and is easily accessed by a variety of users. One of the most direct ways to project the public demand the trail system is through a level of service (LOS) analysis. The LOS analysis for trails in this plan is based on the access to trails within city limits, distribution of trails, and their quantity. To measure these factors, a service area method was used to calculate the level of service provided by the City's trail system.

The LOS method used included three general steps that are outlined below and described in detail in the LOS Methodology section. The result of this exercise was the generation of trail project ideas and information that was used to prioritize potential projects. See section 6.6 Implementation for details on the development of trail projects.

LOS General Steps:

1. Determine the current service provided by the inventory of existing facilities
2. Compare current service to the service standard set by the City and
3. Identify the gaps in service

6.5.1 LOS Methodology

The level of service methodology for trails follows the Washington State Recreation and Conservation Office (RCO) guidance.[12] The 2010 PARCC Plan LOS trail methodology was 0.35 miles of trail per 1,000 population by neighborhood. This method is relatively simple to measure and has been standard practice in the Parks and Recreation industry for decades. The RCO and other industry leaders have suggested that this method results in an overly simplified view for planning trails and suggest using a more meaningful approach that accounts for user needs, gaps in service, or safety issues as examples.

6.5.1.1 Current Service Provided:

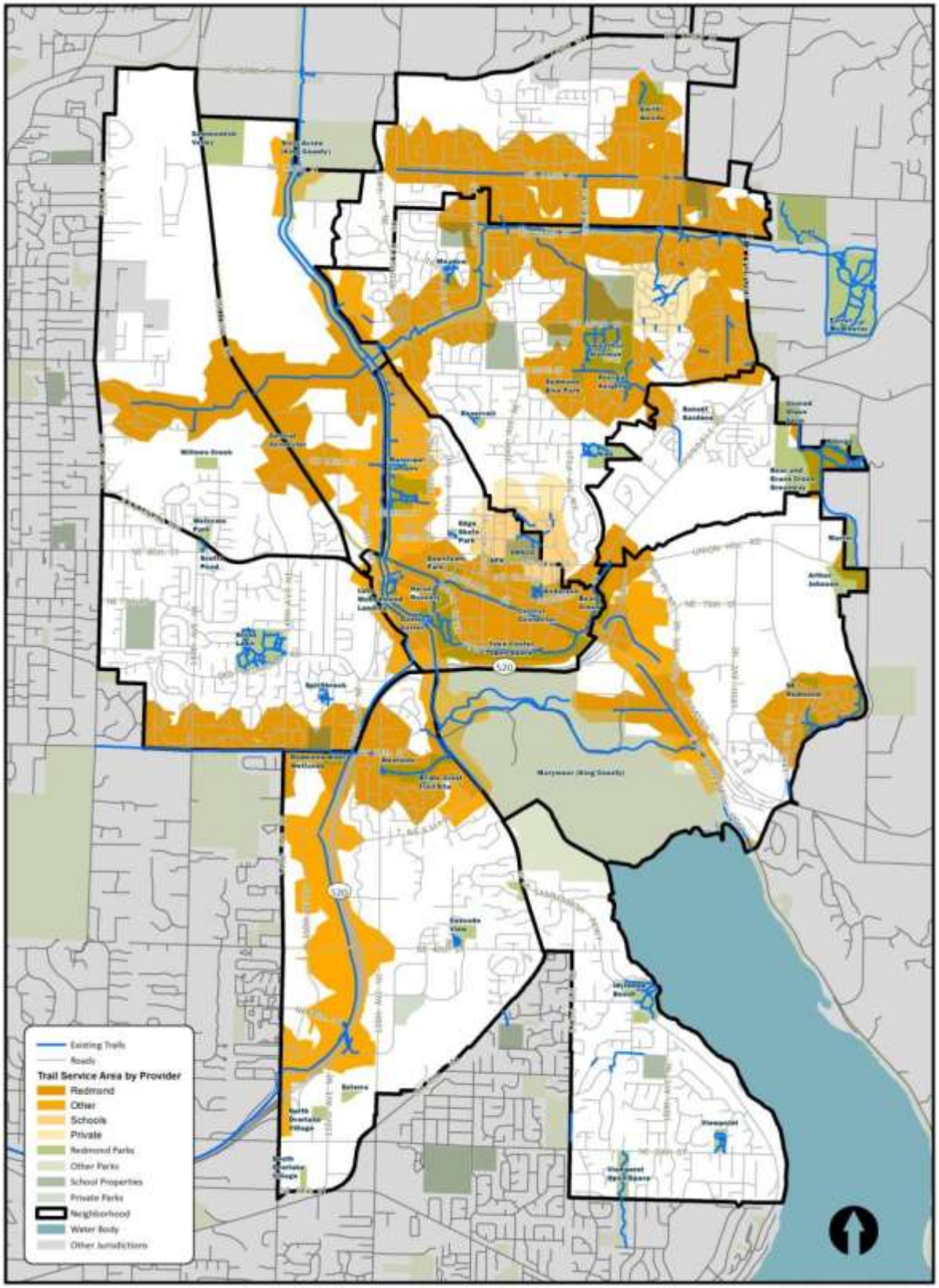
For this plan, a LOS method was developed around the geographic service area provided by the trail system as seen in Exhibit 6.13. The service area method was selected because several factors, explained in the following sections, may be considered simultaneously, such as:

- Target population
- Walkability
- Geographic equity
- Credit for trails by other providers

Target population: As described in Chapter 1, the target population used in this analysis includes Redmond's residential population plus 25 percent of employment population. While people that work in Redmond use City's facilities, it is estimated that only a quarter of the employment population does so. The forecast populations were derived from the City Planning Department which calculates growth rates. Population data was paired with the service areas to calculate the percent of the population served. The data includes estimated populations for both residents and employees for the years 2015 and 2030.

[12] RCO, 2014. Manual 2, Planning Policies and Guidelines

Exhibit 6.13: Level of Service - Service Area by Provider



Trails Level of Service - Service Area by Provider PRELIMINARY

Walkability: Walkability is facilitated by the sidewalks and trails built within the city. When there are obstructions to the network of sidewalks and trails, such as gaps in the system, rivers or large roadways, the ability for walkability decreases. To account for walkability, a GIS model of existing sidewalks and trails provides a real-world perspective to the analysis. Studies indicate that people(or individuals/) are willing to walk only so far before they choose an alternate mode of travel, such as a vehicle, and that a preferred walking distance for a routine trip can range from ¼ mile to 1 mile in length (walking preference study citation coming soon). In light of this research, the conservative distance of ¼ mile walking distance is used as the basis for measurement in this method.

Geographic equity: Use of the service area method allows planners to analyze geographic equity at a glance. This analysis examines the amount of access each neighborhood has to the trail system. Areas not covered by the service area are considered to be underserved and become priority locations for additional facilities and/or connections.

Credit for trails by other providers: Beginning with the 2010 PARCC Plan, the City has included trails provided by other agencies and jurisdictions in the City's trail inventory. This was done, in part, as a way to analyze the trail system from the user's perspective. While most trails provide full public access, some providers restrict public access to a greater or lesser degree. For instance, trails provided by Lake Washington School District (LWSD) must be closed to the public during school hours for reasons of school security, and are open for public use during non-school hours. Also, some privately developed trails may be open to the public, and others are restricted to neighborhood resident use only. In an effort to include other provider trails in the level of service analysis while also accounting for this variation in service opportunity, a service percentage was applied to the trail provider service area. Trails with unrestricted public access are assigned 100 percent service. Trails provided by LWSD, for example, are assigned 50 percent service since their trails are open approximately half of the time. Exhibit 6.14 describes providers and the percent credit applied to their respective service areas.

Exhibit 6.14: Trail Service Area Credit by Provider

Provider	% Credit Applied to Service Area
City of Redmond	100%
City of Bellevue	100%
King County	100%
WSDOT	100%
LWSD	50%
Private	25%

The first step in this analysis was to determine the current service provided by the existing inventory of trails. This work was conducted by staff using GIS as described in section 6.2 Inventory. Once the GIS inventory was updated, the service area provided by existing trails was generated. The service area was then used to determine the percentage of the population served by the trail system. To create the geographic service area, every point of connection to the trail system was mapped. Then, GIS was used to measure a ¼ mile distance along the sidewalk-trail network from each point to map the area served by each point of connection. This analysis was done on a citywide scale as shown in Exhibit 6.15

6.5.1.2 Service Standard:

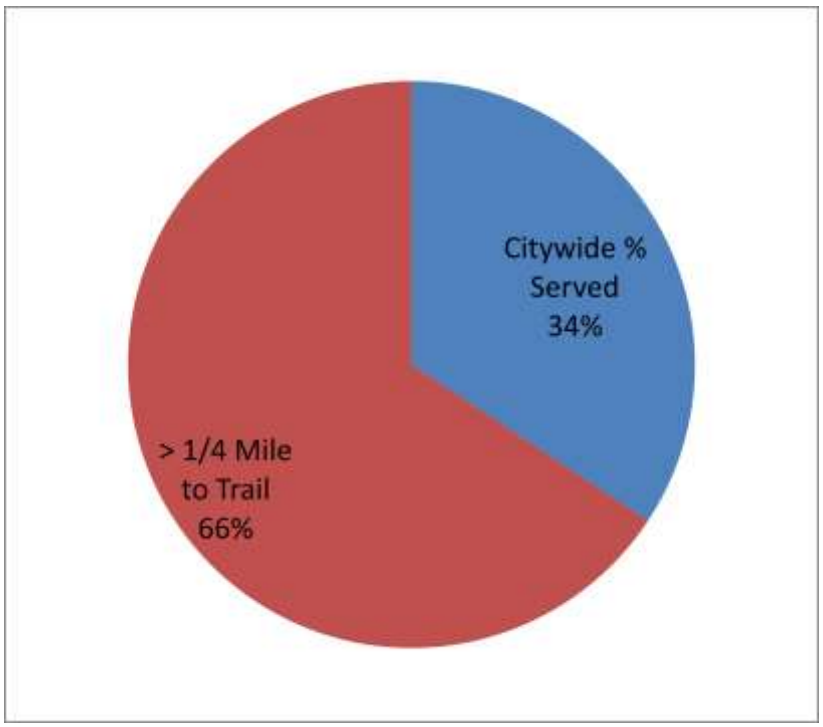
The service standard provides a benchmark by which the current level of service is measured. The difference between the service standard and the current level of service is identified as the service gap, described in the following section. The overarching goal for the measure is to provide convenient access to parks and trails for all who live and work in Redmond. The method used calculates the percent of the population within a ¼ mile of an entry point to a trail.

LOS Standard: 100% of the target population has convenient access to public trails from home or office.

Target population: 100% of residential population plus 25% of the employment population

6.5.1.3 Gaps in Service

Exhibit 6.15: Percent Population Served by Trails.



Estimated % pop served in 2015. Redmond's residential population in 2015 was estimated to be 58,800 and 25% of the employee population was estimated to be 20,180.

Measuring the current service level against the service standard provides the gap in service for the trail system. Using the service area method allows planners to quickly identify the geographic locations of the city that are underserved, and then prioritize future projects in those areas. Exhibit 6.13 shows a map of the trail service area using 2015 trail data.

6.5.2 LOS Results

Exhibit 6.15 shows that in 2015, the trail system provided convenient access to trails for 34 percent of the target population of who live and work in Redmond. This graph indicates that there is a gap in trail service. About 66 percent of the target population is not within a quarter mile of an access point from home or work.

6.6 Implementation

One of the goals of the PARCC Plan implementation is to develop and deliver capital projects that serve the priorities of the community. Exhibit 6.16 lists the steps for the development and delivery of capital projects.

6.6.1 Developing the CIP Project List

Capital projects are those that cost more than $25,000, that can depreciated over time and meet at least one of the following criteria:

- New facility, or increases square footage of an existing facility
- Changes the function of a facility
- Increased the capacity of a facility

One of the main objectives of this plan is a recommended list of trail projects for implementation. To ensure that the recommended list of projects provides the highest value to the community the following steps are taken:

- Identify potential projects
- Evaluate feasibility
- Rank feasible proposed
- Assemble projects into the CIP
- Conduct planning level studies

Identify potential projects: The product of this step is a universal project list. This list is a clearinghouse of all trail ideas and concepts generated in prior planning efforts and during the public outreach for this plan. Project ideas range from conceptual to fully planned and adopted trail projects. The first step in creating this list is to consolidate existing trail project ideas from previous planning efforts such as the 2010 PARCC Plan, the City's Transportation Plan, Comprehensive Plan (including Neighborhood Plans), and Zoning Code. New trail project ideas are generated during outreach to the public and to City staff.

Evaluate Feasibility: The product of this step is a refined trail project list. The feasibility assessment process included GIS-based steps that analyzed trail service area (see LOS section), gap analysis, connectivity, population density, and constructability. Project ideas are mapped and scored by each filter. The GIS filtering and scoring identifies potential trail projects that provide the greatest benefit to the city geographically.

Exhibit 6.16: Implementation Steps for Capital Projects.

To be located in sec. 6.6.2

Rank proposed projects: Once scored, projects are ranked based on the CIP project ranking criteria as described in section 6.6.2.

Assemble projects into the CIP: The product of the last step is a list of prioritized capital projects. This list is the basis for the capital improvement program (CIP).

Conduct planning level studies: Once the list of capital projects has been assembled, each project is given more definition such as high level scope details and preliminary cost estimates.

6.6.2 Prioritizing CIP Projects

The following criteria are used to rank potential trail projects. Projects are scored by each criterion.

- Preserve or replace asset
- Geographic equity
- Walkability and connectivity
- Community demand
- Unique benefits:
    - Environmental
    - Economic
    - Art
    - Historic
    - Partnerships
    - Regulatory

Chapter 10 contains details on the ranking criteria used in this plan.

Exhibits 6.18 and 6.19 below, lists potential trail projects, prioritized by the ranking criteria. The following is a prioritized list of potential trail capital projects including an estimated timeline for completion, the estimated costs in 2016 dollars, and the total ranking score of the project. Project numbers correspond to the number shown on Exhibit 6.27.

During the budgeting process, the highest priority trail CIP projects are proposed in the Capital Investment Strategy, where citywide capital projects are ranked against each other using criteria based on the city's strategic initiatives.

Exhibit 6.18: Proposed Trail Projects - 6 Year Priories

Project No.	Trail Name	Neighborhood	Length (miles)	Classification	Estimated Cost	Estimated Year Completed	Ranking Score
1	NE 100th St to Willows Trail	Willows/Rose Hill	0.13	Connector	$183,000	2018	34
2	RCC Connection - 87th Crossing at Willows Rd	Willows/Rose Hill	0.02	Connector	$240,000	2017	34
3	RCC Connection - 84th St Stairs	Willows/Rose Hill	0.04	Connector	$385,000	2017	33
4	RCC Connection - 90th Bicycle Link	Willows/Rose Hill	0.07	Connector	$40,000		26
5	RCC Connection - Red160 Connection	Willows/Rose Hill	0.01	Connector	$90,000		16
6	Tosh Creek Trails Ph I	Overlake	0.69	Local	$270,000	2019	15
				Total Estimated Cost	$1,208,000		

Exhibit 6.19: Proposed Trail Projects - 20 Year Priorities

Project No.	Trail Name	Neighborhood	Length (miles)	Classification	Estimated Cost	Estimated Year Completed	Ranking Score
7	10201 Willow Crossing to RCC	Sammamish Valley	0.02	Connector	$308,000	TBD	21
8	Audobon Elem. Area Trails (on HOLD - further internal discussion needed)	Idylwood	0.54	Local	$811,000	TBD	16
9	NE 84th and 85th connections to 139th Ave	Willows/Rose Hill	0.06	Connector	$332,000	TBD	15
10	Redmond Central Connector Ph III	Sammamish Valley	1.72	Regional	$8,620,000	TBD	15
11	Bear & Evans Creek Trail 8 (Segment through former Keller Farm to existing trail)	Bear Creek	1.42	Regional	$7,084,000	TBD	13
12	West Sammamish River Trail - Paving & W Lake Sammamish Pkwy Crossing	Downtown	0.35	Connector	$1,602,000	TBD	13
13	Marymoor to W Lake Sammamish Pkwy Trail	Idylwood/Overlake	0.55	Regional	$2,755,000	TBD	13
14	Grasslawn Nonmotorized Connection (Along 154th, RCC Ph II to W. Lake Sammamish Pkwy & Old Redmond Rd)	Grass Lawn	0.25	Connector	$1,036,000	TBD	13
15	Bear & Evans Creek Trail 1 and Novelty Hill Connection (FM Park to B&EC Trail on NE 95th)	Bear Creek	0.57	Regional	$2,865,000	TBD	13
16	150th Ave NE Nonmotorized Connection	Overlake	0.39	Connector	$1,642,000	TBD	12
17	148th Ave NE Multiuse Trail - Willows Rd to Bridle Crest Trail	Overlake	1.57	Regional	$7,857,000	TBD	12
18	148th Ave NE Multiuse Trail - Bridle Crest Trail to 520 interchange	Overlake	1.92	Regional	$9,604,000	TBD	12

Exhibit 6.19: Proposed Trail Projects - 20 Year Priorities Continued

Project No.	Trail Name	Neighborhood	Length (miles)	Classification	Estimated Cost	Estimated Year Completed	Ranking Score
19	156th Ave NE Multiuse Trail	Overlake	1.49	Regional	$7,456,000	TBD	12
20	185th Ave NE at 67/68th	SE Redmond	0.09	Connector	$393,000	TBD	12
21	Bear & Evans Creek Trail 10 (North route through former Keller Farm site)	Bear Creek	0.67	Connector	$2,530,000	TBD	12
22	Bear & Evans Creek Trail 7 (Redmond Way to East Lake Samm Trail)	Bear Creek	0.32	Regional	$1,579,000	TBD	12
23	Bear & Evans Creek Trail 3 (alternative route to B&EC Trail 1)	Bear Creek	0.51	Connector	$2,138,000	TBD	12
24	Bear & Evans Creek Trail 4 (alternative route to B&EC Trail 1)	Bear Creek	0.12	Connector	$500,000	TBD	12
25	161st Ave to Rockwell Trail	Education Hill	0.04	Connector	$108,300	TBD	11
26	Bear & Evans Creek Trail 5 (Arthur Johnson Park to SE Redmond Trail)	SE Redmond	0.68	Regional	$3,389,000	TBD	11
27	Bear Creek Trail to Marymoor 1 (crossing under 520 on east side of Samm. River)	Downtown	0.41	Regional	$2,070,000	TBD	11
28	East Lake Sammamish Trail (Close gap between RCC and E. Lake Samm. Trail)	Downtown/SE Redmond	0.34	Regional	$1,697,000	TBD	11
29	Ben Rush School to Bridle Crest Trail	Grass Lawn	0.16	Local	$199,500	TBD	10
30	Nike Park Trails	Education Hill	1.95	Local	$199,500	TBD	10
31	Lakeside Trail (in SE Redmond Trail OS)	SE Redmond	0.28	Local	$419,000	TBD	10
32	NE 111th Ct to NE 112th Way	Willows/Rose Hill	0.12	Connector	$510,000	TBD	10
33	NE 116th Trail 1 (Red-wood Rd to RCC III/Willows)	North Redmond	1.07	Connector	$4,471,000	TBD	10
34	Faith Lutheran to Red-Wood Rd	Education Hill	0.10	Connector	$362,000	TBD	9

Exhibit 6.19: Proposed Trail Projects - 20 Year Priorities Continued

Project No.	Trail Name	Neighborhood	Length (miles)	Classification	Estimated Cost	Estimated Year Completed	Ranking Score
35	NE 116th Trail (176th Ave NE to 178th Ave NE)	North Redmond	0.14	Connector	$584,000	TBD	9
36	NE 116th Trail 4 (178th Ave NE to 179th Ave NE)	North Redmond	0.03	Connector	$142,000	TBD	9
37	NE 80th St Trail	SE Redmond	0.19	Connector	$775,000	TBD	9
38	Overlake Urban Pathway	Overlake	2.31	Connector	$11,544,000	TBD	9
39	NE 73rd to Grass Lawn Connection	Grass Lawn	0.06	Local	$86,000	TBD	8
40	PSE Powerline Trail 6 (FM Park to Watershed)	Education Hill	1.02	Regional	$4,573,000	TBD	8
41	PSE Trail West (N/S) project_north of existing PSE Powerline Trail	Willows/Rose Hill	2.54	Regional	$11,420,000	TBD	8
42	PSE Trail West (N/S) project_south of existing PSE Powerline Trail	Willows/Rose Hill & Grass Lawn	1.79	Regional	$8,047,000	TBD	8
43	PSE Trail & Willows Crossing	Sammamish Valley	0.04	Regional	$400,000	TBD	8
44	Redmond Way to E Lake Sammamish Pkwy Trail (alternative route for East Lake Sammamish Trail)	SE Redmond	0.36	Regional	$1,788,000	TBD	8
45	Redmond Way Trail 1 (Sammamish River Trail to 123rd)	Grass Lawn	1.58	Regional	$7,924,000	TBD	8
46	Redmond Way Trail 2 (180th Ave NE to 189th Pl NE w/ connection to B&EC Trail)	SE Redmond	0.88	Regional	$4,414,000	TBD	7
47	Sammamish River Trail @ NE 90th St to Willows Rd Trail	Sammamish Valley	0.28	Connector	$1,178,000	TBD	7
48	West Samm River Trail - Paving & W Lk Samm Crossing (Wrong Name??)	Downtown	0.27	Connector	$1,120,000	TBD	6

Exhibit 6.19: Proposed Trail Projects - 20 Year Priorities Continued

Project No.	Trail Name	Neighborhood	Length (miles)	Classification	Estimated Cost	Estimated Year Completed	Ranking Score
49	Willows to 154 Ave NE	Sammamish Valley	0.76	Connector	$3,155,000	TBD	6
50	Willows to Redmond Way Connector Trail (Connects RCC II to Redmond Way)	Downtown	0.22	Connector	$927,000	TBD	6
51	Woodbridge Extension Trail	SE Redmond	0.10	Connector	$433,000	TBD	5
52	Woodbridge Neighborhood Connector Trail	SE Redmond	0.91	Connector	$3,778,000	TBD	4
				Total Estimated Cost	$134,825,300		

Exhibit 6.20: Proposed Trail Projects Map – 6-year and 20-year Priorities

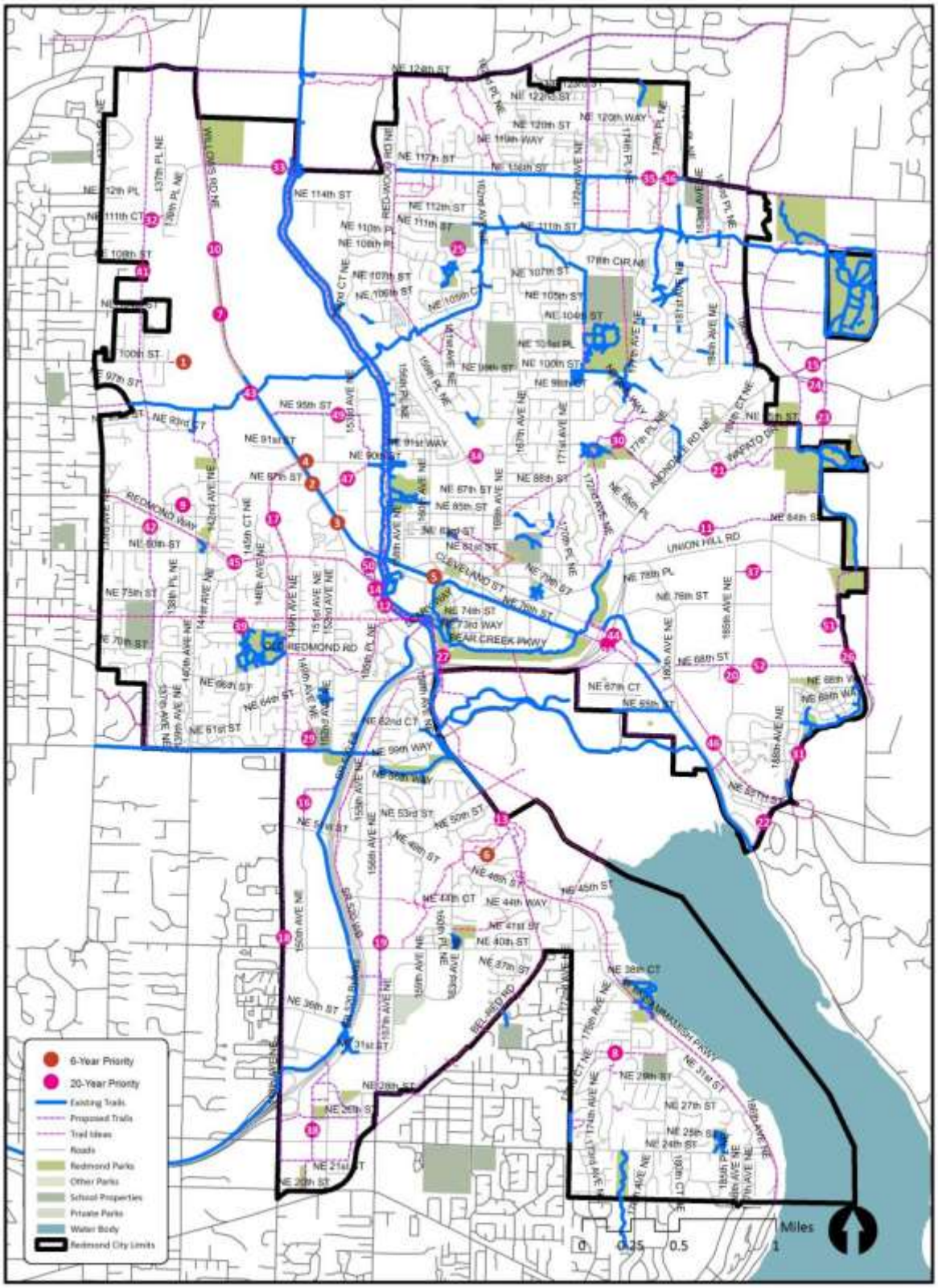
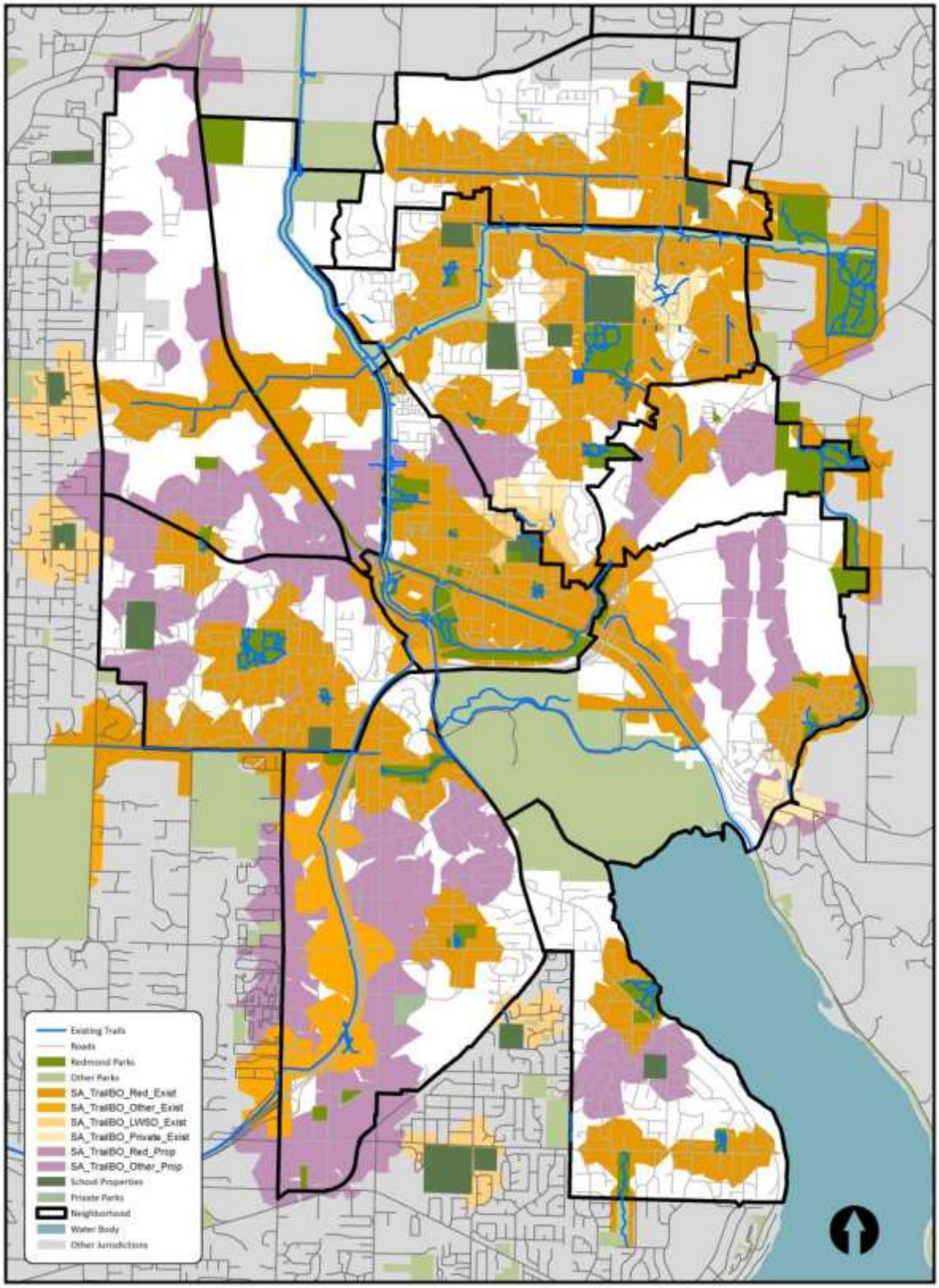


Exhibit 6.21: Service Area Expanded by Proposed Trail Projects



Trails Level of Service - Quarter Mile Service Area by Provider PRELIMINARY

Project Descriptions

Below are descriptions of select projects that were highly ranked through the CIP ranking process.

NE 100th Street to Willows Trail

6-Year Priorities:

NE 100th Street to Willows Trail: This connector trail would link 100th Avenue to the pedestrian and bicycle facilities along Willows Road, including the Redmond Central Connector, which is under construction. Public road right-of-way exists for this project. The right-of-way abuts the private campus of the DigiPen Institute.

Redmond Central Connector Linkages

Redmond Central Connector Linkages: This series of connector trails designed to improve access to the Redmond Central Connector (RCC) trail. More service will be provided to the community by increasing the number of access points to the trails. This project provides for access points to the trail at the following locations:

- NE 90th St, by adding a bike lane connection
- NE 87th St connection including a crossing of Willows Road with a rectangular rapid flash beacon and trail segment
- NE 84th St connection including a crossing of Willows Rd. with a rectangular rapid flash beacon, trail segment and stairs over the steep slope to the trail
- Trail connection to the Red 160 apartments
- Crossing at NE 76th and 168th Ave. NE

Tosh Creek Trails

Tosh Creek Trails: This proposed local trail system in the Overlake neighborhood would be constructed in a forest with steep slopes that would connect various housing developments and provide recreational hiking opportunities. Currently, all the property in the drainage is privately owned and some type of public access is needed for any trail development to occur. Implementation of a trail system in the drainage can be broken into three zones; north zone, central zone, and south zone. The system is conceptualized with a main trail that connects from NE 40th Street following Tosh Creek to West Lake Sammamish Parkway. Multiple side trails are conceptualized that connect residential areas across the creek.

Chapter 6: Trails

20-Year Priorities:

Willows/Rose Hill Neighborhood Connections: Multiple opportunities exist in the Willows/Rose Hill neighborhood to better connect residential areas to business districts with short local trail segments.

- NE 87th Street to 143rd Court: This connection would allow people to get to the businesses along 148th Avenue.
- NE 85th Street and NE 84th Street connections to 139th Avenue: Creating local trails in line with NE 85th Street and NE 84th Street would allow better east-west travel by foot and bicycle through the area.
- Willows Fjord Trails: There are a number of local trails that meander through the wooded area to the north of the Redmond/Puget Sound Energy Trail that are known as the Willows Fjord Trails. Most of these trails are on private property and the City will investigate the logistics of gaining public access to those trails.
- Redmond/Puget Sound Energy Trail: The City would like to gain formal public access for a trail that runs north-south along a PSE utility easement from approximately 40th Street in the Grass Lawn neighborhood to NE 124th Street.

NE 85th St and 84th St connections to 139th Ave.

Redmond Central Connector Phase III, Artist rendering from Redmond Central Connector Master Plan, 2011

Redmond Central Connector Phase III: Phase III of the Redmond Central Connector is the last 1.6 miles of paved regional trail that would connect Redmond to the remainder of the Eastside Rail Corridor trails in Kirkland and King County across NE 124th Street. The cities of Redmond and, Kirkland, and King County are also exploring options to create a more direct route from Redmond to Totem Lake via Willows Road to the Cross Kirkland Corridor, along Willows Road or NE 124th Street. This phase is not currently funded; however, the project ranks highly among other trails. If the City Council prioritizes this project it would improve active transportation modes to offices on Willows and to the urban centers in Downtown Redmond and Totem Lake.

Bear & Evans Creek Trail - East Redmond Corridor

Bear & Evans Creek Trail 8 – Avondale Rd to Perrigo Park Segment: This leg of the regional Bear & Evans Creek Trail would connect the Bear Creek Trail at its north end of near Avondale Road to the Bear & Evans Creek Trail running through the Bear & Evans Greenway and Perrigo Park. This project would close a significant gap in the regional trail system and would make pedestrian and bicycle travel to the east side of Redmond much easier and safer. The project would be a paved portion of regional trail that passes

West Sammamish River Trail to West Lake Sammamish Pkwy Connection

Marymoor to West Lake Sammamish Pkwy Trail

154th Ave. Trail to Old Redmond Rd.

through and next to a City-owned wetland bank formerly known as the Keller Farm. The wetland bank will provide a scenic backdrop for the trail and ample opportunities for public education about wetlands and their benefits.

Another leg of the Bear & Evans Creek Trail (segment 10) is planned to make an east-west connection along the north border of the wetland bank. This connection is a lower priority than segment 8 since it would largely serve the same populations. Additionally, a pedestrian/bicycle facility along NE 95th St, as proposed by City Transportation Planning, would provide better service.

West Sammamish River Trail to West Lake Sammamish Pkwy Connection: Currently, it is difficult for pedestrians and cyclists to make the connection from Old Redmond Road and West Lake Sammamish Parkway to the Sammamish River Trail. This project would address this gap in the pedestrian/bike system, and includes a pedestrian/bike facility along W Lake Sammamish Pkwy between Old Redmond Road and 154th Avenue NE, a crossing of 154th Avenue NE, new trail construction down to the existing West Sammamish River Trail (King County) and paving of that trail to Leary Way.

Marymoor to West Lake Sammamish Pkwy Trail: This project would connect the existing southern end of the Sammamish River Trail to West Lake Sammamish Pkwy with a paved regional trail. Currently, this stretch of West Lake Sammamish Pkwy provides bike lanes only. .

154th Ave. Trail to Old Redmond Rd.: Connecting residential areas to regional trails allow people to move more easily from home to work or other destinations around Redmond. This project connects the residential areas along Old Redmond Road to the Redmond Central Connector Trail via a trail that parallels 154th Avenue. This project is referred to in the City Transportation Facilities Plan as the Grasslawn Nonmotorized Connection (cite TFP)

Chapter 6: Trails

Overlake Multiuse Trails: - (urban pathway) Overlake is planned to have significant population growth between 2016 and 2030. Providing sufficient pedestrian and bicycle facilities for the people who will be there is key to the livability of the area. The Overlake has very little open land where trails can be built to typical standards which has led to the creation of alternative facilities referred to as "urban pathways" (RCZ 21.12). These facilities are designed to accommodate pedestrians and bicyclists as typical trails are but they are planned to be located in street rights-of-way instead of on separated properties. Urban pathways are planned for 148th Avenue, 156th Avenue and in a looping system in Overlake Village.

Bear & Evans Creek Trail – East Redmond Corridor: The Bear Creek and Evans Creek corridors present opportunities to create significant regional trail connections. The 2009 East Redmond Corridor Master Plan presents a vision where a string of parks are all connected by a regional trail along Redmond's east border. Some of the trail segments in the plan have been built since the plan was created but several segments remain to be completed.

- Segment 1 connects Perrigo Park to Farrel McWhirter Park, two of Redmond's most popular recreation destinations.
- Segment 5 fills the gap between two existing trail segments and connects Martin Park and Arthur Johnson Park to the Southeast Redmond Open Space.
- Another leg called the "Lakeside Trail" extends the trail south to Highway 202, Redmond Way.

Segment 7 links to King County's East Lake Sammamish Trail by paralleling 187th Avenue NE.

School Connections: School grounds provide a number of opportunities to make it easier for children to walk or bicycle to school.

- 161st Avenue NE to the Rockwell Elementary School: The pavement of an existing trail has fallen into disrepair making it challenging for some users to traverse. A pavement replacement project would address the issue and improve access to the school.
- Benjamin Rush Elementary School to the Bridle Crest Trail: Creating a local trail connection from the neighborhood on 150th Avenue NE through the school campus to the Bridle

Overlake Multiuse Trails (urban pathways, RZC 21.12)

Bear & Evans Creek Trail - East Redmond Corridor

161st Ave. NE to Rockwell Elementary School

Crest Trail would facilitate walking and bicycling to the school.

Nike Park Area Trails

Redmond/Puget Sound Energy Trail Gap

Overlake Pedestrian/Bicycle Bridges (Artist concept rendering of proposed Overlake Village Bridge)

Bear Creek Trail to Marymoor Park: This trail would provide a more direct link between the Bear Creek Trail and Marymoor Park. It includes a bridge over Bear Creek and a trail under SR 520. The trail makes getting to Marymoor park and all of the recreation and cultural opportunities much easier.

Nike Park Area Trails & Centennial Trail: The forested slopes surrounding Nike Park present several opportunities to connect the neighborhood with local trails. These trails would close the gap in a much larger loop trail around Redmond that includes the Bear Creek Trail, The Sammamish River Trail, the PSE Powerline Trail, the 172nd Street Trail and the Ashford Trail. This loop was referred to in the 2010 PARCC Plan as the Centennial Trail.

- Nike Park to Hartman Park Trails: A trail network is conceptualized between residential areas, parks, open spaces the Ashford Trail, the Redmond Bike Park and down to Avondale Road.
- Nike Park to Avondale Way Trail: A trail connection is conceptualized between Nike Park and the intersection of Avondale Way and Union Hill Road.

Redmond/Puget Sound Energy Trail Gap: The Redmond/PSE Trail is a four mile regional trail beginning west of Willows Road, crossing the Sammamish River, through Education Hill to Farrel-McWhirter Park. A gap in the trail exists between Farrel McWhirter Park and the Redmond Watershed Preserve. Since the property for this trail is outside City limits King County will lead the work to close the gap in the trail.

Overlake Pedestrian/Bicycle Bridges: Two pedestrian/bicycle bridges are planned for the Overlake area that will make walking and biking easier in the area especially to Microsoft campus locations.

- Overlake Transit Center Bridge: This bridge will connect the proposed Transit Center across SR 520 to the Microsoft campus off NE 40th Street and to the SR 520 Trail.
- Overlake Village Bridge: This bridge will connect the development planned for the Overlake Village area across SR 520 to the Microsoft campus on NE 31st Way and to the SR 520 Trail.

6.6.3 Funding

Trail capital projects are funded through a variety of city funding sources including:

- City Capital Improvement Program (allocation from general fund)
- Real Estate Excise Tax
- Development Impact Fees

The City is unable to fund all of the capital projects alone and continues to look at new possible sources of funding and ways of implementing projects. Some options include:

- Dedicated land
- Grants
- Private funding
- Developer built projectsPartnerships
- Park and special Districts
- Bond Measure

Other financial strategies include partnerships, where funding can be leveraged. Two ongoing examples include collaborations on the Eastside Rail Corridor to build connections from Redmond to Kirkland and to the proposed Sound Transit station in SE Redmond and the Sammamish River Trail. In addition, the City is working with King County to complete the "missing link" in the Redmond/PSE trail between Farrel-McWhirter Farm and the Watershed.

.

Caption Text Sample Here.

Appendix A: Policies

The following is a compilation of policies from all elements of the City Comprehensive Plan that are related to the planning, design and development of trails. Policies are arranged by the element name under which they appear in the Comprehensive Plan.

Goals, Vision and Framework Policies

FW -29 Maintain and promote a vibrant system of parks and trails that are sustainably designed, preserve various types of habitat and protect the natural beauty of Redmond.

FW-37 Influence regional decisions and leverage transportation investments that support Redmond's preferred land use pattern and vision by increasing mobility choices and improving access between the city and the region for people, goods and services.

FW-41 Preserve Redmond's heritage, including historic links to native cultures, logging, and farming, and its image as the Bicycle Capital of the Northwest, as an important element of the community's character.

FW-44 Promote opportunities to enhance public enjoyment of river and lake vistas and provide public places to take advantage of the Sammamish River as a community gathering place.

Community Character and Historic Preservation Policies

CC-24 Design and create trails, sidewalks, bikeways and paths to increase connectivity for people by providing safe, direct or convenient links between the following:

- Residential neighborhoods,
- Schools,
- Recreation facilities and parks,
- Employment centers,
- Shopping and service destinations, and
- Community gardens.

CC-25 Preserve trailheads and equestrian connections, including those between Bridle Trails State Park in Kirkland, the Sammamish River equestrian trail, Farrel-McWhirter Park, Bridle Crest Trail, Redmond Watershed Preserve, Puget Power Trail and the Tolt Pipeline Trail, and the rural areas adjacent to the city to the north and east, such as King County's Kathryn Taylor Equestrian Park.

Natural Environment Policies

NE-12 Encourage environmentally friendly construction practices, such as Leadership in Energy and Environmental Design (LEED), King County Built Green, and low-impact development.

NE-16 Use Best Available Science to preserve and enhance the functions and values of critical areas through policies, regulations, programs, and incentives.

NE-18 Use science-based mitigation to offset unavoidable adverse impacts to critical areas.

NE-141 Minimize overhead lighting that would shine on the water surface of the city's various streams. Encourage the use of pedestrian level or shaded lighting when providing lighting along the Sammamish River Trail.

Transportation Policies

TR-12 Assign high priority to pedestrian and bicycle infrastructure projects and mitigation that address safety and connectivity needs, provide access to Downtown and Overlake Urban Centers, encourage safe and active crossings at intersections and routes to schools, provide linkages to transit, and complete planned bicycle and pedestrian facilities or trails.

TR-13 Use the Bicycle and Pedestrian Plans in the Transportation Master Plan to guide the design, construction and maintenance of bicycle and pedestrian facilities by public and private parties, including the preparation of design standards and elements that promote a pleasant and safe traveling environment.

TR-15 (Excerpt) Require that during the review process for new development or redevelopment that:

- Construction and implementation of other off-road and multi-use trails and trail crossings, as described in the Parks, Arts, Recreation, Culture and Conservation Plan (PARCC) Plan, or which are located within a development area or within a shared corridor, are coordinated with project review; and

TR-16 (Excerpt) Implement the Pedestrian Plan contained in the Transportation Master Plan to:

- Provide for a safe, convenient and coordinated system of sidewalks, trails and pathways, including through routes, crossings and connections, to meet needs for pedestrians;

Parks, Arts, Recreation, Culture and Conservation Policies

Boardwalk trail at Redmond West Wetlands

"Provide a system of parks, recreation, arts, trails, and open space to serve existing development and planned growth."

- policy PR-1

Chapter 6: Trails

Existing Policies:

PR-1 Provide a system of parks, recreation, arts, trails, and open space to serve existing development and planned growth.

PR-6 Distribute parks and recreation and cultural facilities throughout Redmond to improve walkability and provide an equitable distribution of parks based on population density. Encourage this type of planning by calculating neighborhood park and trail level of service standards based on neighborhood populations.

Proposed Revised Policies:

G1. Develop and promote an interconnected community through trails and pathways easily accessed by a variety of trail users.

G2. Maintain and utilize a hierarchy of trails and trail design standards based on function.

G3. Ensure the ease of using the trail system and attract new users by providing a well-designed signage and wayfinding system.

G4. Promote the concept and use of the "Blue Trails" waterways by coordinating with jurisdictions and other organizations in the region.

G5. Promote safe and convenient non-motorized travel to parks, trails, and recreational facilities through the planning of trails, bike lanes, safe walking routes and public transit routes with City departments, surrounding jurisdictions, state and federal agencies and private organizations to reduce dependence on vehicles.

G6. Cooperate with local, state and federal agencies and private organizations in development of the local and regional trail system.

G7. Encourage development of trails that are separated from traffic, with an emphasis on safety and minimizing conflicts between various trail users.

G8. Encourage King County to develop, maintain and promote the trail on the west side of the Sammamish River to enhance access and views of the Sammamish River, and to develop the missing link along the PSE Trail between Farrel-McWhirter Park and The Redmond Watershed Preserve.

G9. Design development along the Sammamish River to orient toward the river and reinforce its identification as a community gathering place and recreation area in a manner that is sensitive to and protects the natural environment.

G10. Coordinate with Eastside Rail Corridor Regional Advisory Committee partners on the planning and development of the Redmond Central Connector, and connections to the Eastside Rail Corridor and East Lake Sammamish Trail, as a regional trail with opportunities for community gathering, art, culture and historic interpretation, as well as for light rail transit, options for other transportation connections and utility placement.

G11. As a complement to the citywide pedestrian pathway system, the City should develop a visual system for enhancing connections to the shoreline and identifying shoreline areas, considering such elements as street graphics, landscaping, street furniture or artwork. (SMP)

G12. Increase use of trails by developing trailheads adjacent to regional or connector trails that can be easily accessed by vehicles or transit. Provide parking, trail information and restrooms at trailheads where appropriate.

CF-13 Use capital facilities to attract growth to urban centers by:

- Giving priority to funding for public facilities within the Downtown Redmond and Overlake Urban Centers;
- Creating a mechanism to provide ongoing capital funds for Redmond's Urban Centers;
- Prioritizing projects outside these Urban Centers that will increase mobility to and from the centers

Appendix B: Trail Design Standards

Note: There are no updates to the 2010 trail design standards proposed for the 2016 PARCC Plan. Content from the 2010 standards will be retained but formatting will be updated to meet the 2016 plan.